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ICBM PROGRAM OFFICE ENGINEERING DIRECTIVE FOR INTEGRATED LOGISTIC SUPPORT REQUIREMENTS FOR MX WEAPON SYSTEM

1 July 1977

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Prepared for

DEPARTMENT OF THE AIR FORCE
SPACE AND MISSILE SYSTEMS ORGANIZATION (AFSC)
ICBM Program Office

Under Contract F04606-76-A-0087-R901

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Publication W77-1953-TN02

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ICBM PROGRAM OFFICE ENGINEERING DIRECTIVE

FOR

INTEGRATED LOGISTIC SUPPORT REQUIREMENTS FOR MX WEAPON SYSTEM

1 July 1977

SPACE AND MISSILE SYSTEMS ORGANIZATION
AIR FORCE SYSTEMS COMMAND

Prepared by

Logistics (MNL)
Deputy for Intercontinental Ballistic Missiles

ICBM PROGRAM OFFICE
ENGINEERING DIRECTIVE

FOR

INTEGRATED LOGISTIC SUPPORT REQUIREMENTS
FOR MX WEAPON SYSTEM

1 July 1977

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CONTENTS

1
SCOPE

This Engineering Directive delineates the criteria and requirements for the implementation of Associate Contractor logistic support activities during the design, development, and testing of the missile system and support equipment for the Missile-X (MX) Program.

The scope of compliance with this directive shall be limited by the referencing paragraph in the contract statement of work and by the Contract Data Requirements List (DD form 1423).

2
APPLICABLE DOCUMENTS

The following documents, of the issue in effect on the date of the invitation for bids or request for proposals, form a part of this directive to the extent specified herein. In the event of conflict between these documents and this directive, the directive shall take precedence.

2.1 COMPLIANCE DOCUMENTS

MIL-STD-470	Maintainability Program Requirements
MIL-STD-1388	Logistic Support Analysis
MIL-STD-1538	Spare Parts and Maintenance Support of Space and Missile Systems Undergoing RDT&E
MIL-STD-1543	Reliability Program Requirements for Space and Missile Systems
SAMSO-STD-68-19	Human Factors Engineering Specification
SAMSO-STD-68-62	System Requirements Analysis Program

2.2 REFERENCE DOCUMENTS

AFR 80-5	Reliability and Maintainability Programs for Systems, Subsystems, Equipment and Munitions
AFR 800-8	Integrated Logistic Support Program for Systems/Equipment
AFR 800-15	Human Factors Engineering and Management
MIL-STD-471A	Maintainability Verification, Demonstration, and Evaluation
MIL-STD-721B	Definition of Effectiveness Terms for Reliability, Maintainability, Human Factors and Safety
MIL-STD-781B	Reliability Tests, Exponential Distribution
MIL-STD-1367	Packaging, Handling, Storage and Transportability Program Requirements for Systems and Equipment

MIL-STD-1472B	Human Engineering Design Criteria for Military System, Equipment, and Facilities
MIL-STD-1552	Provisioning Technical Documentation
AFLCR 57-9	Initial Spares and Repair Parts Policy
AFLCR 57-27	Determination of Requirements of Initially Provisioned Items
AFSCM 310-1	Management of Contractor Data
AFLCM/AFSCM 800-4	Optimum Repair Level Analysis
AMCP 750-16	AMC Guide to Logistics Support Analysis
MIL-HDBK-217B	Reliability Prediction of Electronic Equipment
MIL-HDBK-472	Maintainability Predictions
AFLCR/AFSCR 800-24	Standard Integrated Support Management System

3
LOGISTIC SUPPORT PROGRAM

The contractor shall establish and conduct a logistic support program for items being procured for the MX Weapon System in accordance with the approved Integrated Support Plan. This program shall provide all elements of logistic support applicable to the procurement in accordance with the specifications, directives, standards, and associated documents delineated in the contract. Where existing hardware is being modified to meet MX requirements, the requirements of this directive shall apply to the modification effort.

The logistic support program shall be the most economical possible within the requirements established herein. The contractor will develop an integrated effort encompassing all elements of support. The logistic support analysis (LSA) which forms a part of the logistic program shall be one of the primary means for the contractor to ensure coordination among his support groups.

The contractor shall assure that logistic support efforts are systematically planned and conducted by integrating the following logistic functions into the system/equipment design process to ensure:

a. Logistic planning and procedures

b. Logistic support analysis

c. Preoperational support

3.1 INTEGRATED SUPPORT PLAN REQUIREMENTS

The contractor shall develop an Integrated Support Plan (ISP) detailing the management and conduct of his logistic support program. The ISP shall be prepared in accordance with the requirements of data item description (DID) DI-L-6138A, and will be tailored to MX Program needs with updates provided as the system/equipment matures. Classified data shall be separately bound and cross-referenced to the applicable portion of the ISP.

The contractor ISP shall detail how the logistic elements will be integrated by outlining management procedures and responsibilities, conference milestones, and trade study milestones for each element, on a time scale that will permit the element to be addressed in time to have the desired impact on design.

The contractor shall identify to SAMSO/MNL, in writing, any additional MX Program planning data required to prepare the ISP. The requirements shall include the date when the data are required, their intended use, and the impact if the data are not provided.

3.2 SAMSO RESPONSIBILITIES

SAMSO shall provide the contractor with necessary logistic planning data and shall update these data as changes occur.

3.3 CONTRACTOR/ILS PROGRAM INTERFACE

The contractor shall designate an individual to act as the focal point for all contractor responsibilities related to logistic support requirements. The contractor shall provide within 21 days after contract award, the individual's name, position, address, and telephone number, and the name and telephone number of his alternate.

The designated individual shall participate in and provide information for Integrated Logistic Support Management Team (ILSMT) meetings to be conducted by SAMSO/MNL Logistics Manager. The first such meeting will occur approximately 30 days after contract award. Subsequent meetings will generally occur every 60 days thereafter throughout the contract period.

3.4 CONTRACTOR INTERFACE WITH SUBCONTRACTORS/VENDORS

The contractor shall institute procedures to ensure that subcontractor and vendor products adequately reflect ILS requirements, i.e., that their effect on the system/equipment is consistent with the program supportability goals.

3.5 NONDUPLICATION OF EFFORT

The contractor, in satisfying the requirements of this document, shall utilize tasks and data required by the contract for individually imposed military standards pertaining to specialized engineering disciplines (e.g., reliability; maintainability; human engineering; safety; standardization; and packaging, handling, storage, and transportability programs). LSA planning shall identify coincident program data to be utilized in the LSA, and LSA data to be provided to coincident programs. Duplication of contractor effort shall be avoided.

4
LOGISTIC SUPPORT ANALYSIS PROGRAM

The contractor shall conduct a logistic support analysis (LSA) program in accordance with the procedures of MIL-STD-1388, the SAMSO approved LSA Plan, and the requirements contained herein. The LSA program shall be the basis for integrating logistic efforts and shall govern the interfaces between LSA and both SRA and design engineering. The contractor shall use the LSA to 1) identify quantitative and qualitative logistic support requirements, 2) influence system/equipment design, 3) integrate support elements into logistic support capability, and 4) verify the supportability of the system/equipment and validate the achievement of logistic goals.

4.1 LSA PROGRAM PLANNING

The contractor shall develop and submit an LSA Plan, in accordance with the Contract Data Requirements List (CDRL), which will satisfy the requirements of DID DI-S-7017 in detailing the contractor approach to conducting the LSA program. Upon SAMSO approval, the LSA Plan shall be incorporated into the ISP (see par. 3.1). The LSA Plan will clearly show the relationship of the LSA to the design effort and key design milestones (e.g., SDR, PDR, and CDR).

4.2 LOGISTIC SUPPORT ANALYSIS

LSA shall be accomplished in conjunction with system/equipment design to evaluate the effect of design alternatives on support costs and operational readiness, and to assess logistic risks. The impact of support alternatives upon system/equipment life-cycle cost, availability, equipment and manpower loading, and stocking of parts shall be predicted and evaluated. LSA documentation shall identify logistic resources required for preoperational and operational phases of the system/equipment at all levels of maintenance. The logistic resources shall be defined in terms of:

a. Maintenance planning

b. Support and test equipment

c. Supply support

d. Transportation and packaging

e. Technical data

f. Support facilities

g. Personnel and training.

4.2.1 LSA Tasks

Logistic Support Analysis comprises a series of tasks, which shall be accomplished by the contractor in conjunction with operational system requirements analysis, life cycle cost/design to cost analysis, and design engineering efforts. There is much interdependency among these efforts, in that results from one impact the others. The documenting of information from these efforts shall be in accordance with specified requirements. The LSA shall include, but not be limited to, the tasks discussed in the following paragraphs.

4.2.1.1 Historical Data Review

Historical data and constraints imposed by existing logistic systems should be examined to assist in the establishment of a design compatible with cost, performance, and system requirements. The review of historical data from similar systems/equipment to relate past experience to the logistic support requirements of the new acquisition will consider:

a. Failure potential of subsystems, components, items, etc.

b. Major downtime contributors

c. Specific design features that facilitate logistic support

d. Potential logistic support problem areas including degrading design features

e. Design concepts with potential safety impacts

f. Design characteristics versus support costs

g. Gross requirements for logistic support resources such as manpower, equipment, transportation, and facilities.

Preliminary designs, influenced by historical data and constraints imposed by existing logistic systems, will be utilized during the early design stages to assure that a balance is achieved among cost, performance, and support requirements. These projections will be used to provide inputs to system functional analysis and system design specifications.

4.2.1.2 Support Requirements Identification

Support-system synthesis shall be performed as an organized approach to examining and selecting support system concepts that will provide economical and effective support of mission requirements. Support functional requirements such as inspection, calibration, and repair and replacement criteria shall be determined. Tradeoff analyses between design and support concepts shall be performed prior to design finalization. The nature of the tradeoff models or special techniques to be used, and the magnitude, scope, and level of detail of the analysis will depend upon the system complexity. Tradeoffs between support alternatives (identified during support synthesis) and equipment design parameters will be made to provide an effective, economical support system which best satisfies system operational requirements within the constraints of LCC/DTC goals. Cost factors used in the analytical tradeoff process for deriving the life cycle cost of development, procurement, operation, and

support of proposed alternatives shall, whenever practical and applicable, be based upon data provided by the Air Force from surveillance of operational systems. Contractor-developed cost estimates may also be used as a source of data for the tradeoff procedure. These factors may be measured in terms of manpower, equipment, facility space, and supplies, normalized to constant fiscal year dollars to provide a common basis for comparisons.

4.2.1.3 Logistic Design Appraisal

The contractor shall perform logistic design appraisals as an integral part of the design review process for weapon system equipments. System design reviews, preliminary design reviews, and critical design reviews are major milestones in this appraisal. Informal support-system design appraisals will be conducted at lower system indenture levels throughout full scale development. These appraisals shall consider the impact of the proposed system/equipment on the existing logistic and operational systems of the Air Force, as well as the impact of the proposed support system on the system/equipment under development. Changes to requirements which necessitate changes to existing logistic support procedures must be identified and documented in the LSA. The concepts, policies, and principles established by operations and logistic support studies form constraints on system design, and must be compatible with mission and effectiveness requirements of the system/equipment.

4.2.1.4 LSA Candidates

System/equipment items for which logistic support requirements must be determined, and for which the Government does not have an established maintenance capability, shall be candidates for LSA. The contractor shall recommend LSA candidates in consonance with the above criteria. In general, such candidates include:

a. Contractor-furnished items that can be or will be repaired or overhauled separately from the assembly, subsystem, or system with which they are functionally associated

b. Government-furnished items incorporated into contractor-furnished functional assemblies and subsystems, when the LSAs are to provide interface information required for determination of total support requirements for the assembly or subsystem

c. Government-furnished items for which no previous analysis data are available, and where such data are necessary for contractor determination of support requirements under the terms of the contract.

4.2.1.5 Zero Indenture Logistic Support Analysis

Zero indenture LSA is conducted whenever additional support functions or elements must be defined for a group of aerospace vehicle equipment (AVE) or support equipment (SE) end items (zero indenture). Additional support functions and elements are those not defined by maintenance analysis.

The contractor shall advise SAMSO of the need for zero indenture LSA in the case of 1) critical fault ambiguities documented in the fault matrices during the failure mode analysis, and 2) other actions associated with groups of end items not directly related to failure modes, such as checkout, alignment, calibration, etc. A

critical ambiguity exists when testing and checkout requires procedures or equipment not identified by the individual system/equipment data, and when the total failure rate of all contributing failures exceeds a threshold value to be established by SAMSO. Associate contractors shall provide support as required to assure proper definition and identification of system elements associated with their equipment involved in the ambiguity. Guidelines for defining those ambiguities requiring additional analysis will be provided by SAMSO.

Zero indenture analysis developed for other than fault ambiguities shall be accomplished by the contractor responsible for the configured items involved. If more than one contractor is involved, SAMSO will designate preparing and supporting contractors.

4.2.1.6 Use Studies

The contractor shall perform use studies to evaluate the following factors with respect to operational requirements:

a. Mobility

b. Mission frequency and duration

c. Operational environment

d. Basing concepts

e. Expected service life.

Operational analysis shall be performed in conjunction with functional and timeline analysis. These analyses shall provide functional flow diagrams, timeline diagrams, and data pertaining to system operations. The data shall include such items as annual operating requirements, consisting of number and duration of missions and number of operating days; number of systems supported; transportation time sequences; support profiles; allowable maintenance periods; and environmental requirements.

4.2.1.7 Timeline Analysis

Contractors shall conduct "time performance" studies to provide 1) technical evaluation of equipment and personnel reaction times, and 2) analysis and evaluation of support system characteristics. Timeline analysis shall be performed for the on-site maintenance function and for certain selected activities to be performed at the maintenance areas. Contractors shall determine composite timelines as needed to support evaluation of proposed designs. (Specific requirements for these analyses will be resolved during technical interchanges with SAMSO.)

The structure of the timeline shall, whenever possible, match the structure of the functional flows. For the maintenance phase, timeline analysis will provide the basis for determining the required quantities of MSE, personnel, and spare parts, and the amount of system downtime for scheduled and unscheduled maintenance.

4.2.1.8 Calibration Requirement Summaries

Calibration requirement summaries shall be based on, and maintained compatible with, the analysis conducted under this document.

4.2.1.9 Impact Review

The contractor shall conduct reviews to determine the impact of the proposed system/equipment on existing logistic and operational systems of the Air Force. Conversely, the impact of the proposed support system on the system/equipment under development shall be continuously examined throughout the LSA. Interface requirements which necessitate changes to existing logistic support techniques must be identified and documented in the LSA. The concepts, policies, and principles established by operations and logistic support studies form constraints on system design, and must be compatible with mission and effectiveness requirements of the system/equipment.

4.2.2 Logistic Requirements Identification

Logistic support analysis encompasses a number of analytic elements. Although the elements will be discussed individually herein, there are distinct interrelationships among them. Individual parameters utilized to quantify an element may be applicable to more than one element. The LSA elements are listed below and discussed in the following paragraphs.

a. Maintainability Interface

b. Reliability Interface

c. Nuclear Hardness and Survivability Interface

d. Maintenance Planning

e. Support and Test Equipment

f. Supply Support

g. Transportation and Packaging

h. Technical Data

i. Support Facilities

j. Personnel and Training

k. Logistic Support Management Information

l. Logistic Support Resource Funds

4.2.2.1 Maintainability Interface

The Maintainability Interface element is a characteristic of equipment design and installation and is expressed as an engineering parameter. Maintainability parameters shall be developed by the contractor as qualitative and quantitative inputs to the design process for use in tradeoff analyses, risk analyses, and the development of a logistic support capability responsive to system/equipment operational requirements.

Results of the maintainability program conducted in accordance with MIL-STD-470, and of the functional analysis, failure mode analysis, and timeline analysis performed in accordance with this document, shall be utilized in developing maintainability data for the LSA. Maintainability data generated by the various analyses shall be recorded on LSA Record (LSAR) data sheets, as described in Appendix A.

4.2.2.2 Reliability Interface

The reliability program, conducted in accordance with MIL-STD-1543, generates data applicable to the LSA and operational SRA. The data product includes MTBFs of configuration items, and failure modes and rates of piece parts. The applicable reliability data shall be recorded on LSAR data sheets for the failure mode analysis (FMA). The FMA identifies equipment failure modes and the required design change to preclude or reduce their occurrence, or the maintenance action needed to minimize their impact on system effectiveness.

4.2.2.3 Nuclear Hardness and Survivability Interface

The Nuclear Hardness and Survivability (NH&S) Interface element is a characteristic of the design and is expressed as an engineering parameter. NH&S parameters shall be developed as quantitative inputs to the design process and utilized in tradeoff analyses. The goal of NH&S Interface as an LSA element is to assure that the level of system hardness provided for in the basic system design is not inadvertently degraded as a result of routine operational and maintenance functions, and that unacceptable levels of hardness degradation do not occur as a result of the stresses of operational life, such as aging, corrosion, etc. Results of the NH&S program shall be utilized in developing NH&S data for the LSA. NH&S related data shall be recorded on LSAR data sheets.

4.2.2.4 Maintenance Planning

Maintenance planning establishes concepts and requirements for each level of projected maintenance to be performed in support of the operational system/equipment. Included in the maintenance planning process is a maintenance task analysis that will:

a. Define actions and support necessary to ensure that the system or equipment attains the specified operational capability with minimum life cycle cost.

b. Consolidate the specific criteria for repair times, maintainability and failure rate characteristics, support equipment requirements, and facility requirements at all support levels.

c. Determine the specific maintenance tasks to be accomplished at each level of maintenance.

d. Determine work loads and time phasing for maintenance actions at each level of maintenance.

The initial maintenance planning efforts will be centered around the establishment of concepts and goals that the program must achieve with respect to the maintenance characteristics of the system. Throughout the full scale development phase, logistic documentation shall reflect the current state of the proposed

maintenance requirements for the weapon system. This shall be accomplished by describing to increasingly lower indenture levels the maintenance and supply support required by the system. Data will include the reliability and maintainability parameters and requirements, maintenance tasks (including time and personnel), descriptions of maintenance organizations, support and test equipment requirements, maintenance standards, supply support requirements, and facilities requirements. These data will be recorded on the appropriate LSAR data sheets.

4.2.2.4.1 Optimum Repair Level Analysis (ORLA) – The maintenance planning process shall include an ORLA to evaluate all off-equipment maintenance alternatives identified during the support synthesis task (see 4.2.1.2). This analysis shall make use of the general decision process presented in AFLCM/AFSCM 800-4 to determine those tasks that will require a detailed economic analysis so that a valid repair decision can be reached. Results of the ORLA process shall be documented in accordance with the CDRL. The first ORLA iteration shall be accomplished prior to the first submittal of LSARs.

4.2.2.4.2 Maintenance Analysis – The contractor shall perform a maintenance analysis for each peculiar configured item or group of configured items of AVE, operational support equipment (OSE), and maintenance support equipment (MSE). The analysis shall identify all preventive and corrective (unscheduled) maintenance functions down to the lowest repairable nonstandard component. The LSAR lists functions of maintenance against which equipment must be analyzed. The maintenance analysis shall identify:

a. System preventive maintenance functions required on a completely installed system in the operating configuration

b. Unscheduled maintenance functions that can be accomplished on equipment items in a system-installed configuration to restore the system to an operating condition

c. Maintenance functions required on each reparable assembly removed/installed in the system-installed configuration

d. Maintenance functions required on each reparable assembly removed/installed after its next higher assembly has been removed from the system-installed configuration.

4.2.2.5 Support and Test Equipment

The results of functional analysis, failure mode analysis, timeline analysis, and the ORLA will be used to develop support and test equipment requirements. As an additional data source, the contractor shall use the maintenance task analysis output defining the personnel necessary to operate and maintain the equipment.

Support and test equipment includes all tools, metrology and calibration equipment, performance monitoring and fault isolation equipment, and maintenance support equipment necessary to maintain the system/equipment. Usable existing equipment shall be identified as part of this effort so that the development of peculiar equipment can be held to a minimum.

Support and test equipment data resulting from LSA shall include:

a. Complete equipment identification

b. Maintenance level at which required

c. Quantity of equipment required per organization per operating location

d. Equipment function and capability

e. Calibration requirements

f. Spares and repair parts lists.

Support and test equipment information shall be recorded on LSAR data sheets.

4.2.2.6 Supply Support

The contractor shall determine the supply support elements required to maintain the system/equipment. Supply support data, recorded on LSAR data sheets, shall be based on an evaluation that will include, but not be limited to system/equipment functional criticality, utilization rates, failure factors, repair times and cycles, and maintenance levels. These data will be used to establish maintenance loading and subsequently to develop provisioning requirements.

4.2.2.7 Transportation and Packaging

The LSAR will be used to record equipment physical dimensions, container requirements and codes, storage and storage space requirements, preservation and packaging requirements, and handling constraints. These data will be used during design reviews to ensure that the system/equipment, support and test equipment, spares, and repair parts are designed, wherever possible, to be compatible with the available modes of transportation and existing handling equipment. In addition, the data contained in the LSAR shall be used in the preparation of the Transportability Evaluation Plan.

4.2.2.8 Technical Data

Technical data provides the link between personnel and equipment by presenting information necessary to guide personnel in the performance of operational and support tasks. Results of the LSA as documented by LSAR data sheets are inputs for the development of technical data, and provide a common data base for the retention of that information.

4.2.2.9 Support Facilities

The LSA and operational SRA tasks identify and define facilities required to support the testing and maintenance functions for the system/equipment. The proposed concepts and designs for facilities shall be predicated on the specific technical requirements identified during the SRA and LSA.

Data recorded on LSAR data sheet F will be used to provide facility designers with the technical information necessary to prepare facility plans. The contractor shall assure that the information recorded on that data sheet describes and justifies all

proposed special or additional facility requirements which have been initially indicated on LSAR sheet C during the conduct of the maintenance analysis. Sketches and other information shall be attached to LSAR data sheet F, as required, for further definition of the proposed facility.

4.2.2.10 Personnel and Training

The personnel and training requirements shall be determined on the basis of the operational and maintenance task analysis data recorded during the SRA and LSA. These data shall be recorded on LSAR data sheets. The functions necessary to satisfy the qualitative and quantitative requirements for trained operations and maintenance personnel and training devices necessary to support the system/equipment is an integrated task within the Human Factors Engineering Program established in accordance with SAMSO-STD-68-19.

4.2.2.11 Logistic Support Management Information

A management information system will be implemented for the purpose of retaining logistic support management data. The system will be capable of retaining data with respect to:

a. LSA control documentation and support-engineering test and demonstration reports

b. Support-program schedules and cost controls

c. Standard system and equipment support codes and item identification procedures

d. Identification of each support element's specific data needs

e. Directed configuration management accounting and control procedures

f. Supply management effectiveness reporting systems which reflect current demand and usage data

g. Supportability-versus-performance design tradeoff studies.

4.2.2.12 *Logistic Support Resource Funds*

Based upon information contained on the LSAR data sheets and other sources, resource fund requirements for the logistic support of the system/equipment will be developed. Information to be used in developing these funding requirements shall include, but not be limited to:

a. Demands on the support system resources based on operating and maintenance characteristics

b. Support equipment loading information obtained from support equipment, spare parts, and personnel requirements data recorded on applicable LSAR sheets

c. Requirements for facilities, technical data, transportation and handling, and other significant support items.

4.2.3 Software Considerations

The contractor shall implement a supportability program for the design, development, and operation of software systems. The purpose of this program is to assure that computer programs for the operation/control of system/equipment are logistically supportable. Items to be considered for the supportability program include, but are not limited to:

a. Human factors – This item is associated with the development of products in terms of ease of understanding, ease of use, and built-in characteristics that limit or prevent misuse and the resulting frequency of user errors.

b. Adaptability – Pertains to product design characteristics that will result in ease of adding or modifying user functions.

c. Reliability – Concerns the design characteristics pertaining to fault avoidance, fault detection, fault correction, and fault tolerances within the product.

d. Maintainability – Considers the time and efforts involved in detecting, isolating, and fixing software faults or errors in an operational system.

e. Security – Associated with the ability of the user to accidentally or intentionally destroy data within an operating system.

f. Documentation – Provides recording of the design and operation of the computer program. The ease of understanding and use of this product are prime considerations during its preparation.

4.2.4 LSA Record

The Logistic Support Analysis Record data sheet formats contained in Appendix A shall be used by the contractor to document LSA data. The LSAR shall be developed as the primary source of validated, integrated design-related logistic data pertaining to the MX Program. The contractor shall assign a control number to each LSAR to facilitate document control. The control numbers will be developed by the contractor consistent with the MX Program work breakdown structure provided by SAMSO. The coding structure shall represent a top-down breakdown of the system/equipment, and shall uniquely identify and functionally interrelate items being analyzed.

Each item shall be assigned an individual control number. An identical item used in more than one assembly shall be assigned a different code for each application. The contractor shall acquire written SAMSO/MNL approval of the LSAR numbering system, prior to implementation of the system.

Results of the LSA shall be expressed in terms of standard data elements and related features (data items, chains, or codes) as defined in MIL-STD-1388-2, Appendix B. The contractor shall utilize the detailed instructions provided in Appendix A of this document for guidance in recording LSA data on the LSAR data sheets.

4.2.5 LSA Data Review/Approval

SAMSO/MNL shall review and examine contractor-produced LSA data on a scheduled basis. Contractor-recommended review dates, approved by SAMSO/MNL, will be set to occur approximately 21 days prior to each design review (SDR, PDR, and CDR), and at least once each 90 days during FSD. The review shall include LSAR sheets, LSA output data, drawings, specifications, hardware, etc., necessary to evaluate contractor compliance with and satisfactory completion of the LSA requirements defined herein. The contractor shall provide appropriate facilities for such review and examination. In addition, the contractor shall allow SAMSO/MNL representation full access to the LSA and ORLA data. Submission of LSAR data in support of the reviews will be specified in the DD form 1423.

It should be noted that a complete LSAR data sheet will not necessarily be prepared all at one time, but may evolve as the hardware design is developed. The contractor shall periodically submit the LSAR data as specified in the DD form 1423. For these periodic submissions, only the changed/updated sheets will be provided. A final submission of the complete LSAR for SAMSO/MNL approval shall be in accordance with the CDRL.

4.2.5.1 LSAR Updating Requirements

The LSAR shall be updated to reflect changes in the operational and support requirements, equipment design, and R&M parameters. Each update shall be considered as new data for the purposes of review, approval, and delivery.

4.2.5.2 Special/Formal LSA Reports

Special reporting requirements pertain to status reports (verbal or written) other than those specified by CDRL. These special reports concern problem areas with respect to schedule, cost, etc., and are of a technical nature requiring the immediate attention of SAMSO/MNL or the respective Logistic Element Manager (LEM). Formal report submission shall be as specified in the CDRL.

5
PREOPERATIONAL SUPPORT PROGRAM

The contractor shall establish and conduct a preoperational support program (POSP) to provide contractor logistic support of MX FSD system/equipment. The POSP will normally continue through the early operational deployment phase of the equipment. The level of contractor support will be specified in the contract, depending on contractor/government capabilities and MX Program Office direction.

5.1 PREOPERATIONAL SUPPORT GUIDANCE CONFERENCE

The contractor shall recommend a date for convening a Support Guidance Conference at his facility, to be held not later than 75 days from contract award date. SAMSO/MNL shall establish a firm date for the conference within 15 days of the recommended date. During the conference, agreement shall be established as to the methods for accomplishing the preoperational support tasks. The contractor's draft Logistic Support Plan for Preoperational Support (LSPPS, see para. 5.2) shall be revised as required to reflect the agreed-upon method.

SAMSO/MNL and the contractor shall establish mutually acceptable dates and sites for convening supplemental planning conferences to support the POSP. The LSPPS will be updated as necessary at these conferences.

5.2 LOGISTIC SUPPORT PLAN FOR PREOPERATIONAL SUPPORT

5.2.1 Program Data

The LSPPS shall be developed in coordination with MX program plans and schedules. MX program planning data shall be provided by SAMSO to be used in development of the LSPPS. The contractor shall advise SAMSO/MNL, in writing, of any additional data required to prepare the LSPPS. The request shall include date when required, intended use of data, and impact if not provided.

5.2.2 LSPPS Requirements

To assure that the necessary consideration has been given to preoperational support, a comprehensive LSPPS shall be developed by the contractor. The plan shall define the approach to satisfying the minimum requirement for preoperational support and will become an integral part of the ISP. The LSPPS shall be prepared in accordance with DID DI-L-6143, and shall establish specific guidelines and procedures for implementing actions to support the program.

The contractor shall initially provide a proposed LSPPS as part of the RFP response. The proposed LSPPS shall be revised as a result of the Support Guidance Conference, and then submitted for approval in accordance with the CDRL.

5.3 PREOPERATIONAL SUPPORT REQUIREMENTS

To the extent specified in the contract statement of work, the contractor shall provide spare parts and maintenance support during the preoperational support period in accordance with MIL-STD-1538.

5.3.1 Critical-to-Launch Spares

As an integral part of the logistic support analysis and system requirements analysis, the contractor shall identify those elements of the system/equipment and support equipment that are considered critical to the missile launch function. These data will provide the basis for preparation or repair parts lists, inventory control procedures, and consumption/usage reporting. A Critical-to-Launch Spares Report will be prepared and distributed in accordance with DD form 1423.

5.3.2 Support Material List (SML)

In accordance with DD form 1423, the contractor shall furnish the ordering activity with an SML reflecting a consolidated listing of items and quantities of contractor and Government-furnished spare/repair parts and SE, together with the desired shipping schedule, in sufficient time to allow delivery of the items prior to deployment of the system requiring support.

5.3.3 Consumption/Usage Reporting

In accordance with DD form 1423, the contractor shall prepare a Consumption/Usage Report of all items listed in the SML, and placed under his custody for his inventory management responsibility.

5.4 TRANSITION TO GOVERNMENT SUPPORT

Transition from contractor preoperational support to Air Force support will be directed by means of two conferences: transition planning and final transition. Guidance for this effort is provided in AFLCR/AFSCR 800-24.

5.4.1 Transition Planning Conference

The transition planning conference will be held 9 months prior to the Air Force Support Date. At this conference, the contractor shall present a complete status report of all facets of the POSP. This presentation shall, as a minimum, provide data on the accuracy of contractor maintainability/reliability predictions and maintenance concepts practiced during the program. The presentation shall provide status of:

a. Technical publications
b. Training
c. Facilities
d. Supply support
e. Support equipment
f. Transportation and handling
g. Maintenance planning

The contractor shall review current program data and notify SAMSO/MNL of deficiencies that would reduce the capability of the Government to provide support on the Air Force Support Date.

5.4.2 Final Transition Conference

The final transition conference shall be held 3 months prior to the Air Force Support Date. The primary objective during the final transition conference will be to reduce production and/or operational program support costs by programming reallocation of residual POSP spares/repair parts and SE to satisfy production or operational program support requirement. Conference agenda will include:

a. Repair of reparables, including incorporation of latest changes

b. Transfer of ready-for-issue spares/repair parts and SE

c. Preservation and packaging requirements, including reusable containers

d. Transfer of inventory records

e. Plans for continued preoperational support of designated equipment/components

f. Identification of items for continued commercial repair/rework, including the military service repair/rework readiness date

g. Plans for continued support of Test Program systems.

The contractor shall evaluate all other elements of the POSP to attain an orderly transition from contractor to Air Force support. The contractor shall verify the availability and adequacy of the technical manual program, component pilot rework/overhaul program, personnel and training program, and facilities program. Noted deficiencies in any area will be evaluated to determine impact on Air Force support. When the impact is of a nature that would seriously affect Air Force support, an alternate supporting procedure will be recommended.

5.5 DISPOSITION OF MATERIAL

In accordance with DD form 1423, the contractor shall provide the Administrative Contracting Officer (ACO) with a final listing of residual support material under contractor control. Prior to delivery, equipment, spares/repair parts, and SE as approved by the Procuring Contracting Officer will be brought up to the agreed configuration and placed in a serviceable condition. Repaired items designated for Air Force inventory use will be preserved, packaged, and marked as specified in the packaging exhibit of the contract.

APPENDIX A

INSTRUCTIONS FOR PREPARATION OF THE LOGISTIC SUPPORT ANALYSIS RECORD

A.1 GENERAL

A logistic support analysis shall be performed for each item or group of end items of AVE, OSE, MSE, and DSE. The analysis shall identify logistic support functions specific to system/equipment configurations. Logistic activities leading to logistic functions on specific system/equipment(s) shall be analyzed via flow diagrams that result from system requirements analysis.

LSA shall be conducted in logical sequence by correlating logistic support requirements against fixed functions identified on LSARs for each indenture. (Fixed functions include testing, calibration, servicing, repair, removal, installation, etc.) The LSAR data sheets documenting the support requirements shall be prepared incrementally during the analysis as the requirements are defined.

When test functions are being analyzed, the specific initial indications available to the technician shall be identified for each unique test sequence. The analysis shall be based upon failure mode data and shall develop the logical steps and associated detailed requirements required to isolate faults to specific item, or priority sequence of items, for repair or replacement.

Each LSAR entry identifies a unique set of logistic support data, correlates those data entries with the associated logistic support function, and summarizes the personnel and recommended equipment information.

The sequence of line entries for item analysis shall follow a logical logistic support flow of activities, starting at the higher indenture and installation level (at the system installed facility) and ending with the lowest indenture and associated repair area requiring analysis.

Whenever applicable, and when a choice exists within the logistic support concept (and maintainability criteria for the weapon systems), tradeoff studies shall be conducted to determine the optimum level of maintenance to be performed at each location (organizational, intermediate, or depot). These tradeoffs shall consider such factors as failure rates, time to repair, effect upon operational control capability, quantities of required MSE and personnel, pipeline (supply) times, spare part quantities required, etc. The tradeoffs shall comply with maintainability requirements of MIL-STD-470 and the ORLA requirements of AFLCM 800-4. Decisions to discard faulty items shall also be justified by tradeoffs.

Maintenance to be performed by the using organization (organizational and intermediate), and that to be performed at the depot level, shall be reported on separate LSARs. The LSAR for equipment end items shall identify all maintenance required to be performed at the organizational, intermediate, and depot levels, and shall identify the configuration by indenture, part number, and nomenclature.

A.2 LSAR DATA SHEETS

A.2.1 Data Sheet A: Operations and Maintenance Requirements

LSAR data sheet A (see Figure A-1) will be prepared by SAMSO for the overall system and for each multicontractor subsystem. The contractor shall prepare data sheet A for all subsystem and configuration items for which he is responsible, to the LSA-designated reparable level. This data sheet is structured to consolidate pertinent information related to anticipated operation, applicable environment, and allocation of maintenance requirements.

The data required for completion of data sheet A are provided by SAMSO. This data sheet is a checklist of maintenance allocations and should be available prior to initiation of full-scale development. Data sheet A is prepared for each Government-furnished subsystem to allocate that portion of maintenance requirements over which the contractor has little or no control.

A.2.2 Data Sheet B: Item Reliability and Maintainability Characteristics

Data on item reliability and maintainability characteristics will normally be extracted from the contractor's failure mode analysis and R&M program data. Subject to SAMSO approval, the contractor's failure mode analysis documentation may be used in lieu of data sheet B (see Figure A-2). That data sheet records three types of data:

a. Failure data, including failure modes, effects, and frequency

b. Maintainability review data

c. The maintenance concept of the item under analysis.

During validation, data sheets are prepared to an indenture level sufficient to permit allocation of numerical maintainability parameters. The maintainability considerations are a guide for evaluating design features and the basis for an initial quantitative maintainability prediction. The system maintenance concept, provided by SAMSO, describes the maintenance approach and establishes a baseline for life cycle costing and other evaluations of the item. During full-scale development, additional data sheets are completed for lower indenture levels of the system/equipment, to include each reparable item (system and support equipment). The failure data recorded on this data sheet are a substantial starting point for the maintenance task analysis. The failure effects data constitute the basis for developing fault location and trouble-shooting routines.

A.2.3 Data Sheet C: Task Analysis Summary

The Task Analysis Summary data sheet (see Figure A-3) identifies maintenance tasks and interrelates support requirements (e.g., skill specialties, personnel requirements, task times, and support equipment). This data sheet has two functions:

a. It provides a sound basis for recommending changes to the configuration, or design approach, when the supportability is marginal or unsatisfactory.

b. When the requirement for a particular maintenance function is justified, the data sheet provides the information needed for planning the logistic support.

DATA SHEET A: OPERATIONS AND MAINTENANCE REQUIREMENTS

(For use of this form, see AMC/DARCOM-P 750-16)

PAGE

Card Number 1-4 | A 0 1

1. FGC/WBS/WUC 5-15
2. End Item Acronym Code 16-21
3. Service Des Cd 22
4. FSCM 23-27
5. Alternative Action Code 28
6. Rev Code 29
7. Data Sheet Status 30
8. Dwg Class 31-33
9. Serial Number Effectivity FROM TO 34-53
10. Date 54-59 (YR MO DA)
11. Update Code 80

Card Number 1-4 | A 0 2

1. Item Name 16-34
2. Type, Model, Series 35-60
3. Conversion Factor 61-64
4. Update Code 80

Card Number 1-4 | A 0 3 / A 3 3

1. Mfr Part Number 16-31 LRNC 32
2. FSCM 33-37
3. Drawing Number 38-53 LRNC 54
4. FSCM 55-59
5. Update Code 80

MEASUREMENT BASE

Card Number 1-4 | A 0 4

1. Annual Operating Requirements A 16-21, B 23-28, C 30-35
2. Meas Base 22 / 29 / 36
3. Annual Number of Missions 37-42
4. Annual Operating Days 43-45
5. Mean Mission Duration 46-50
6. Meas Base 51
7. Update Code 80

ORGANIZATIONAL MAINTENANCE

Card Number 1-4 | A 0 5

1. Maintenance Requirements 16-21
A. Number of Systems Supported

TASK INTERVAL Record to Tenths of Hours 22-71

B. Daily Insp		C. Preoperative Insp		D. Post Operative Insp		E. Intermediate Insp		F. Periodic Insp	
Mean Elapsed Time	Mean Man-Hrs	Mean Elapsed Time	Mean Man-Hrs	Mean Elapsed Time	Mean Man-Hrs	Mean Elapsed Time	Mean Man-Hrs	Mean Elapsed Time	Mean Man-Hrs

2. Update Code 80

Card Number 1-4 | A 0 6

G. Unscheduled Maint		H. Turnaround		I. Mission Profile Change		J. M/H per Hour		K. Annual Maint M-H 16-65	
Mean Elapsed Time	Mean Man-Hrs	Mean Elapsed Time	Mean Man-Hrs	Mean Elapsed Time	Mean Man-Hrs	Scheduled	Unscheduled	Scheduled	Unscheduled

2. Update Code 80

INTERMEDIATE/DIRECT SUPPORT MAINTENANCE/AFLOAT

Card Number 1-4 | A 0 7

1. Maintenance Requirements 16-21
A. Number of Systems Supported

TASK INTERVAL Record to Tenths of Hours 22-61

B. Intermediate Insp		C. Periodic Insp		D. M/H per Hour		E. Annual Maint M/H	
Mean Elapsed Time	Mean Man-Hrs	Mean Elapsed Time	Mean Man-Hrs	Scheduled	Unscheduled	Scheduled	Unscheduled

2. Update Code 80

INTERMEDIATE/GENERAL SUPPORT MAINTENANCE/ASHORE

Card Number 1-4 | A 0 8

1. Maintenance Requirements 16-21
A. Number of Systems Supported

TASK INTERVAL Record to Tenths of Hours 22-41

B. M/H per Hour		C. Annual Maint M/H	
Scheduled	Unscheduled	Scheduled	Unscheduled

2. Update Code 80

DEPOT MAINTENANCE

A 0 9

1. Maintenance Requirements 16-21
A. Number of Systems Supported

TASK INTERVAL Record to Tenths of Hours 22-41

B. M/H per Hour		C. Annual Maint M/H	
Scheduled	Unscheduled	Scheduled	Unscheduled

2. Update Code 80

SYSTEM/END ITEM AVAILABILITY

Card Number 1-4 | A 1 0

1. Availability Requirements 16-47

A. MTTR	B. MTBF	C. A_i	D. MAMDT	E. MTBMA	F. A_a

2. Update Code 80

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Figure A-1

DATA SHEET B: ITEM RELIABILITY (R) AND MAINTAINABILITY (M) CHARACTERISTICS

For use of this form, see AMCP 750-16.

PAGE

Card Number 1-4 D 0 1

1. FGC/WBS/WUC 5-15
2. End Item Acronym Code 16-21
3. Service Dsn Cd 22
4. FSCM 23-27
5. Alternative Action Code 28
6. Rev Code 29
7. Data Sheet Status 30
8. Dwg Class 31-33
9. Serial Number Effectivity FROM TO 34-53
10. Date 54-59 (YR MO DA)
11. Update Code 80

Card Number 1-4 D 0 2

1. Item Name 16-34
2. Type, Model, Series 35-60
3. Conversion Factor 61-64
4. Update Code 80

Card Number 1-4 D 0 3 A / D 0 3 B

1. Mfr Part Number 16-31 LRNC 32
2. FSCM 33-37
3. Drawing Number 38-53 LRNC 54
4. FSCM 55-59
5. Update Code 80

Card Number 1-4 D 0 4

1. Mean Time Between Failure 16-21
2. Mean Time To Repair 22-27
3. Mean Time Between Maintenance Action 28-33
4. Update Code 80

Card Number 1-4 D 0 5

1. MAINTAINABILITY CONSIDERATIONS (A Adequate, N Not Adequate)
   a. Standardization 16
   b. Accessibility 17
   c. Ease of Maintenance 18
   d. Safety 19
   e. Test Points 20
   f. Skills 21
   g. Training 22
   h. Connectors for Ease of Removal 23
   i. Standard Packaging & Transportation 24
   j. Fault Location 25
   k. Labeling & Identification (Elect Wires, etc.) 26
   l. Design for Self-Protection Against Damage After Failure 27
2. Maintenance Concept Impact (Y Yes, N No)
   a. Peculiar Support & Test Equipment 28
   b. Peculiar Tools 29
   c. Facilities 30
3. Update Code 80

FAILURE ANALYSIS

Card Number 1-4 D 0 6 A / D 0 6 I

a. Failure Mode 16-31	b. Failure Symptoms 32-47	c. Failure Effect and Criticality 48-63	d. % of Fail Rate 64-66	e. Repair Time 67-71	f. Task Code 72-78

2. Update Code 80

Card Number 1-4 D 0 7

1. ITEM FUNCTION 16-79
2. Update Code 80

Card Number 1-4 D 0 8

1. QUALITATIVE MAINTAINABILITY REQUIREMENTS (Fail Safe, Environmental, etc.) 16-79
2. Update Code 80

Card Number 1-4 D 0 9

1. MAINTENANCE CONCEPT 16-79
2. Update Code 80

Card Number 1-4 D 1 0

1. REMARKS/RECOMMENDATIONS/JUSTIFICATION 16-79
2. Update Code 80

AMC FORM 1954 1 JUL 79

PREVIOUS EDITIONS ARE OBSOLETE

Figure A-2

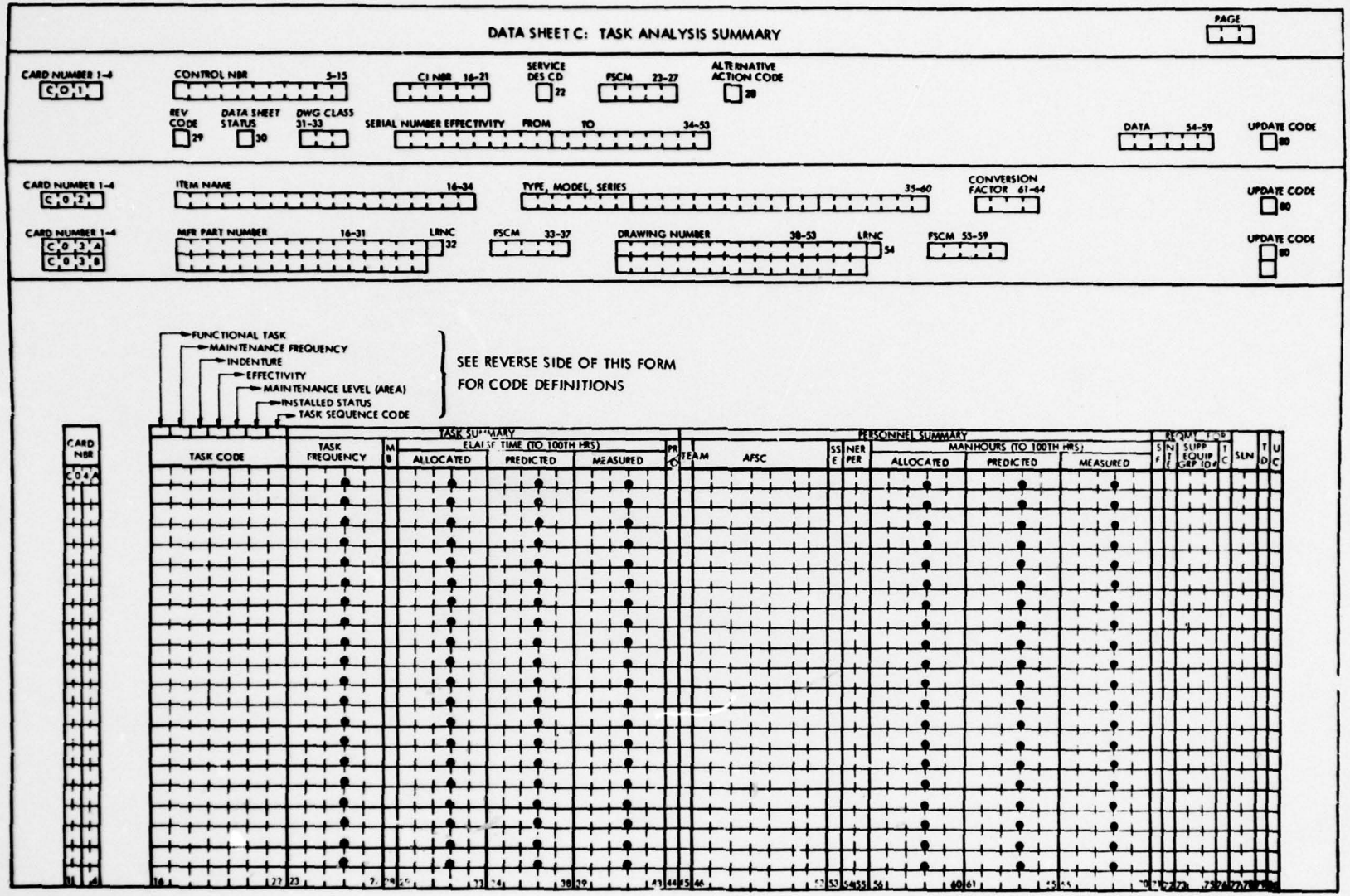

DATA SHEET C: TASK ANALYSIS SUMMARY
PAGE
CARD NUMBER 1-4
C 0 1
CONTROL NBR 5-15
CI NBR 16-21
SERVICE DES CD 22
FSCM 23-27
ALTERNATIVE ACTION CODE 28
REV CODE 29
DATA SHEET STATUS 30
DWG CLASS 31-33
SERIAL NUMBER EFFECTIVITY FROM TO 34-53
DATA 54-59
UPDATE CODE 80
CARD NUMBER 1-4
C 0 2
ITEM NAME 16-34
TYPE, MODEL, SERIES 35-60
CONVERSION FACTOR 61-64
UPDATE CODE 80
CARD NUMBER 1-4
C 0 3 A
C 0 3 B
MFR PART NUMBER 16-31
LRNC 32
FSCM 33-37
DRAWING NUMBER 38-53
LRNC 54
FSCM 55-59
UPDATE CODE 80
FUNCTIONAL TASK
MAINTENANCE FREQUENCY
INDENTURE
EFFECTIVITY
MAINTENANCE LEVEL (AREA)
INSTALLED STATUS
TASK SEQUENCE CODE
SEE REVERSE SIDE OF THIS FORM FOR CODE DEFINITIONS
CARD NBR
C 0 4 A
TASK SUMMARY
TASK CODE
TASK FREQUENCY
M B
ELAPSE TIME (TO 100TH HRS)
ALLOCATED
PREDICTED
MEASURED
PR
PERSONNEL SUMMARY
TEAM
AFSC
SS E
NBR PER
MANHOURS (TO 100TH HRS)
ALLOCATED
PREDICTED
MEASURED
REMARKS
S F
N T E
SUPP EQUIP GRP ID #
T C
SLN
T D
U C

Figure A-3

The data sheet shall be completed down to the indenture level for which the reliability, maintainability, and NII&S characteristics have been identified. When alternate maintenance approaches are identified, a separate task analysis summary shall be prepared for each approach. During full-scale development, data sheet C shall be completed for all significant maintenance tasks required on each reparable item, including support and test equipment.

A.2.4 Data Sheet D: Maintenance and Operator Task Analysis

The Maintenance and Operator Task Analysis data sheet (Figure A-4) is used to list, from data sheet D_1 (see para. A.2.5), the support equipment, repair parts, and materiel needed for the maintenance task. This data sheet is to be completed during the detailed system/equipment design for each maintenance task on all reparable items or subassemblies. When alternate maintenance approaches are identified, separate sheets shall be prepared for each approach.

A.2.5 Data Sheet D_1: Maintenance and Operator Task Analysis Continuation Sheet

Results of detailed equipment Maintenance and Operator Task Analysis are defined on data sheet D_1 (Figure A-5). This data sheet shall identify:

a. Functional requirements

b. MSE recommended to accomplish the technical requirements

c. Facility requirements imposed by the function and/or the MSE; see Appendix V, MIL-STD-490

d. Personnel requirements for each function/task involved in performance of the maintenance function

e. Sequential task analysis.

Preparation of data sheet D_1 is accomplished in two parts: 1) identifying technical requirements of each function, and 2) translating these requirements by the total SRA process into the necessary equipment, facilities, personnel, and technical data. Correlation of data sheet C to data sheet D_1 shall be by identifying sequential line number of the function, equipment nomenclature, and/or the verb identifying the maintenance function. Correlation of data sheet D to data sheet D_1 shall be by control numbers (see Figure A-5). Separate continuation sheets shall be developed for all alternate maintenance approaches considered.

A.2.5.1 Preparation of Zero Indenture Logistic Support Analysis

Zero indenture logistic support analysis is conducted whenever additional system support elements must be defined for a group of end items. Additional functions to be considered are those not covered by either functional flow analysis or by the next-indenture LSA. The fault matrix, through definition of fault ambiguities, is a specific method of defining part of the additional analysis requirements. There are also maintenance functions for groups of end items not directly related to fault modes. These other functions include checkout, alignment, calibration, etc.

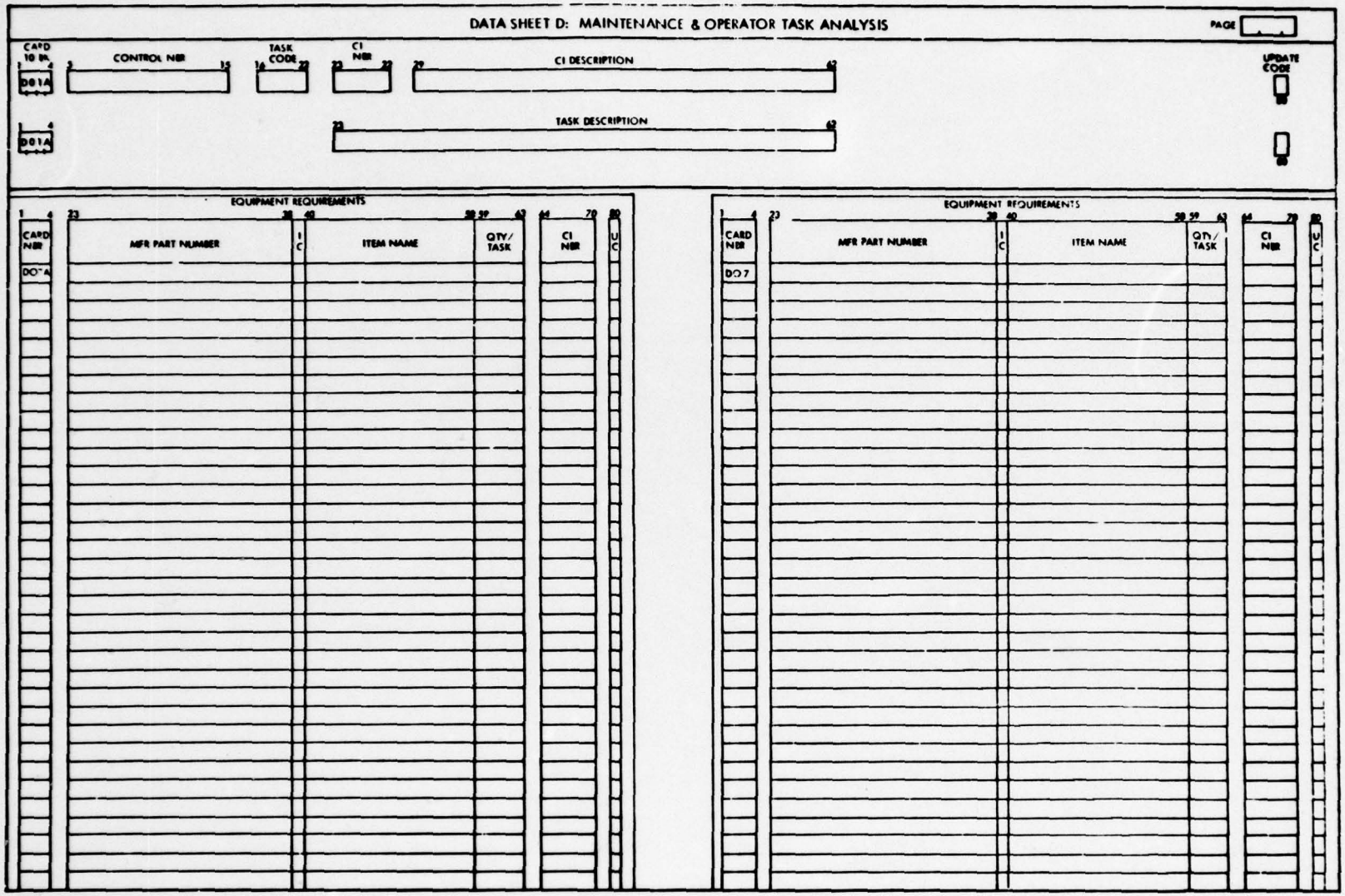

DATA SHEET D: MAINTENANCE & OPERATOR TASK ANALYSIS
PAGE
CARD NBR
CONTROL NBR
TASK CODE
CI NBR
CI DESCRIPTION
UPDATE CODE
D01A
TASK DESCRIPTION
EQUIPMENT REQUIREMENTS
CARD NBR
MFR PART NUMBER
I C
ITEM NAME
QTY/ TASK
CI NBR
U C
D07
EQUIPMENT REQUIREMENTS

Figure A-4

DATA SHEET D_1: MAINTENANCE & OPERATOR TASK ANALYSIS - CONTINUATION SHEET

PAGE

CONTROL NBR

CI NBR

CI DESCRIPTION

SEQ NO	FUNCTIONAL REQUIREMENTS		A&E REF	REQ'D EQUIP	TASK ANALYSIS	PERSONNEL REQMTS				
	[illegible]	MAINT FUNCTION								

A-8

Figure A-5

The zero indenture analysis will be accomplished by SAMSO, coordinating with interfacing contractors as applicable. Contractors shall provide support as required to assure proper definition and identification of system elements associated with their equipment involved in the ambiguity. SAMSO establishes the appropriate guidelines, thresholds, etc., for defining which ambiguities require additional analysis to support weapon system maintenance activities.

A.2.5.2 Additional Instructions for Preparing Zero Indenture Sheet D_1

The zero indenture analyses may involve definition of task sequence only. When this is the case, the sheet D_1 entry in support of the zero indenture/analysis may take the form of a flow diagram. The mechanics of these flows are at the option of the preparing contractor. The title information will designate the gross function, end items involved and, if it is prepared for an ambiguity defined in the fault matrix, the fault matrix fault number.

A.2.6 Data Sheet E: Support and Test Equipment or Training Material Description and Justification

Data sheet E (Figure A-6) is used to describe and justify any peculiar support equipment, peculiar tool requirements, and training material indicated on data sheet C. This information is necessary to provide information for evaluating any proposal to introduce new items into the Government inventory.

A.2.7 Data Sheet F: Facility Maintenance Requirements Description and Justification

Data sheet F (Figure A-7) is used to describe and justify all proposed special or additional facility requirements which are indicated on data sheet D. Sketches or other information may be used. These data are required to provide facility designers with the technical information necessary to prepare facility plans.

A.2.8 Data Sheet G: Skill Evaluation and Justification

Data sheet G (Figure A-8) describes and justifies any new or modified personnel skill required to support the system/equipment. These data are required for each task on data sheet C, where it is indicated in the skill evaluation block that the skill must be modified or a new skill developed.

A.2.9 Data Sheet H: Supply Support Requirements

Data sheet H (Figure A-9) identifies supply support required for operation and maintenance. This data sheet shall be prepared for each item in the system/equipment subject to provisioning actions, to include:

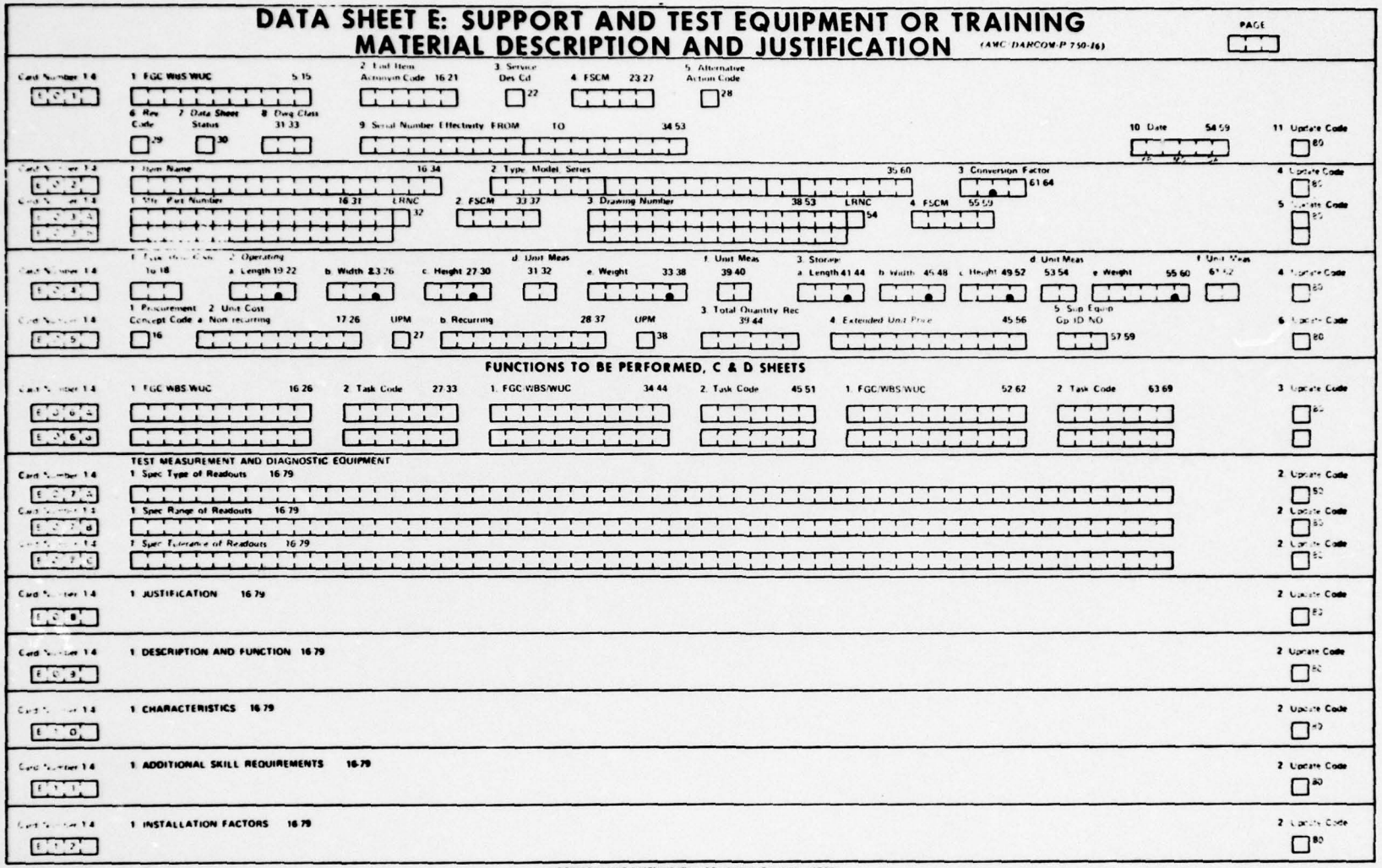
a. Nonreparable piece-parts and assemblies

b. Bulk items

c. Reparable end items, components, and assemblies (including Government-furnished property identified by the procuring activity)

d. Support equipment, tools, training material, and the resources required for their support.

Data Sheet II is structured to permit entry of descriptive information.



DATA SHEET E: SUPPORT AND TEST EQUIPMENT OR TRAINING MATERIAL DESCRIPTION AND JUSTIFICATION

(AMC/DARCOM-P 750-16)

PAGE

Card Number 14 — E S 1

1 FGC WBS WUC 5 15 | 2 End Item Acronym Code 16 21 | 3 Service Des Cd 22 | 4 FSCM 23 27 | 5 Alternative Action Code 28

6 Rev Code 29 | 7 Data Sheet Status 30 | 8 Dwg Class 31 33 | 9 Serial Number Effectivity FROM TO 34 53 | 10 Date 54 59 | 11 Update Code 80

Card Number 14 — E S 2

1 Item Name 16 34 | 2 Type Model Series 35 60 | 3 Conversion Factor 61 64 | 4 Update Code 80

Card Number 14 — E S 3 A

1 Mfr Part Number 16 31 LRNC 32 | 2 FSCM 33 37 | 3 Drawing Number 38 53 LRNC 54 | 4 FSCM 55 59 | 5 Update Code 80

Card Number 14 — E S 4

1 Type Item Cost 2 Operating: a Length 19 22 | b Width 23 26 | c Height 27 30 | d Unit Meas 31 32 | e Weight 33 38 | f Unit Meas 39 40

3 Storage: a Length 41 44 | b Width 45 48 | c Height 49 52 | d Unit Meas 53 54 | e Weight 55 60 | f Unit Meas 61 62 | 4 Update Code 80

Card Number 14 — E S 5

1 Procurement Concept Code 16 | 2 Unit Cost a Non recurring 17 26 UPM 27 | b Recurring 28 37 UPM 38 | 3 Total Quantity Rec 39 44 | 4 Extended Unit Price 45 56 | 5 Sup Equip Gp ID NO 57 59 | 6 Update Code 80

FUNCTIONS TO BE PERFORMED, C & D SHEETS

Card Number 14 — E S 6 A

1 FGC WBS WUC 16 26 | 2 Task Code 27 33 | 1 FGC WBS WUC 34 44 | 2 Task Code 45 51 | 1 FGC WBS WUC 52 62 | 2 Task Code 63 69 | 3 Update Code 80

Card Number 14 — E S 6 B

TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT

Card Number 14 — E S 7 A

1 Spec Type of Readouts 16 79 | 2 Update Code 80

Card Number 14 — E S 7 B

1 Spec Range of Readouts 16 79 | 2 Update Code 80

Card Number 14 — E S 7 C

1 Spec Tolerance of Readouts 16 79 | 2 Update Code 80

Card Number 14 — E S 8

1 JUSTIFICATION 16 79 | 2 Update Code 80

Card Number 14 — E S 9

1 DESCRIPTION AND FUNCTION 16 79 | 2 Update Code 80

Card Number 14 — E S 10

1 CHARACTERISTICS 16 79 | 2 Update Code 80

Card Number 14 — E S 11

1 ADDITIONAL SKILL REQUIREMENTS 16 79 | 2 Update Code 80

Card Number 14 — E S 12

1 INSTALLATION FACTORS 16 79 | 2 Update Code 80

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Figure A-6

DATA SHEET F: FACILITY DESCRIPTION AND JUSTIFICATION

For use of this form, see AMCP 750-16.

PAGE

Card Number 14 F 0 0 1

1. FGC/WBS/WUC (Facility) 5-15

2. End Item Acronym Code 16-21

3. Service Des Cd 22

4. FSCM 23-27

5. Alternative Action Code 28

6. Rev Code 29

7. Data Sheet Status 30

8. Dtg Class 31-33

9. Item Name (Facility) 34-52

10. Date 53-58 (YR MO DA)

11. Facility Cat Code 59-64

12. Update Code 80

FUNCTIONS TO BE PERFORMED C & D SHEETS

Card Number 14 F 0 2 A

1. FGC/WBS/WUC 16-26 | 2. Task Code 27-33 | 1. FGC/WBS/WUC 34-44 | 2. Task Code 45-51 | 1. FGC/WBS/WUC 52-62 | 2. Task Code 63-69 | 3. Update Code 80

Card Number 14 F 0 2 B

1. FACILITIES REQUIREMENTS 16-79

Card Number 14 F 0 3 A

2. Update Code 80

1. FACILITIES DESIGN CRITERIA 16-79

Card Number 14 F 0 4 A

2. Update Code 80

1. FACILITIES INSTALLATION LEADTIMES 16-79

Card Number 14 F 0 5 A

2. Update Code 80

1. TYPE OF CONSTRUCTION 16-79

Card Number 14 F 0 6 A

2. Update Code 80

1. UTILITIES REQUIREMENTS 16-79

Card Number 14 F 0 7 A

2. Update Code 80

1. FACILITY UTILIZATION 16-79

Card Number 14 F 0 8 A

2. Update Code 80

STANDARD FACILITIES PLAN(S) OR SINGLE LINE SKETCH(ES):

1. FACILITY UNIT COST RATIONALE 16-79

Card Number 14 F 0 9 A

2. Update Code 80

1. JUSTIFICATION 16-79

Card Number 14 F 1 0 A

2. Update Code 80

AMC [illegible] 1958

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Figure A-7

DATA SHEET G: SKILL EVALUATION AND JUSTIFICATION

For use of this form, see AMCP 750-16.

PAGE

Card Number 1-4 G 0 1

1. FGC/WBS/WUC 5-15
2. End Item Acronym Code 16-21
3. Service Des Cd 22
4. FSCM 23-27
5. Alternative Action Code 28
6. Rev Code 29
7. Data Sheet Status 30
8. Dwg Class 31-33
9. Serial Number Effectivity FROM TO 34-53
10. Date 54-59 YR MO DA
11. Update Code 60

Card Number 1-4 G 0 2

1. Duty Position Requiring a New or Revised Skill 16-34
2. SSC Number Assigned New Duty Position 35-41
3. Update Code 60

Card Number 1-4 G 0 3

SKILL SPECIALTY CODES

1. (Skill Specialty From Which Personnel Can Be Obtained) 16-22 23-29
2. Aptitude/Qual Test Score 30-31
3. Security Clearance Code 32
4. Recommended Rank/Rate/Grade 33-35
Military Rank/Rate
Civilian Grade 36-39
5. Update Code 60

Card Number 1-4 G 0 4 A / G 0 4 B

FUNCTIONS TO BE PERFORMED, C & D SHEETS

1. FGC/WBS/WUC 16-26
2. Task Code 27-33
1. FGC/WBS/WUC 34-44
2. Task Code 45-51
1. FGC/WBS/WUC 52-62
2. Task Code 63-69
3. Update Code 60

Card Number 1-4 G 0 5

1. ADDITIONAL SKILL REQUIREMENT: (SKILL REQUIRING A NEW OR REVISED SKILL CODE) 16-79
2. Update Code 60

Card Number 1-4 G 0 6

1. PHYSICAL AND MENTAL REQUIREMENTS: 16-79
2. Update Code 60

Card Number 1-4 G 0 7

1. EDUCATIONAL QUALIFICATIONS: (ACADEMIC SUBJECTS, SPECIALIZED SUBJECTS, SPECIALIZED DEGREE AND LICENSES, ETC.) 16-79
2. Update Code 60

Card Number 1-4 G 0 8

1. JUSTIFICATION 16-79
2. Update Code 60

Card Number 1-4 G 0 9

1. ADDITIONAL TRAINING REQUIREMENTS 16-79
2. Update Code 60

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Figure A-8

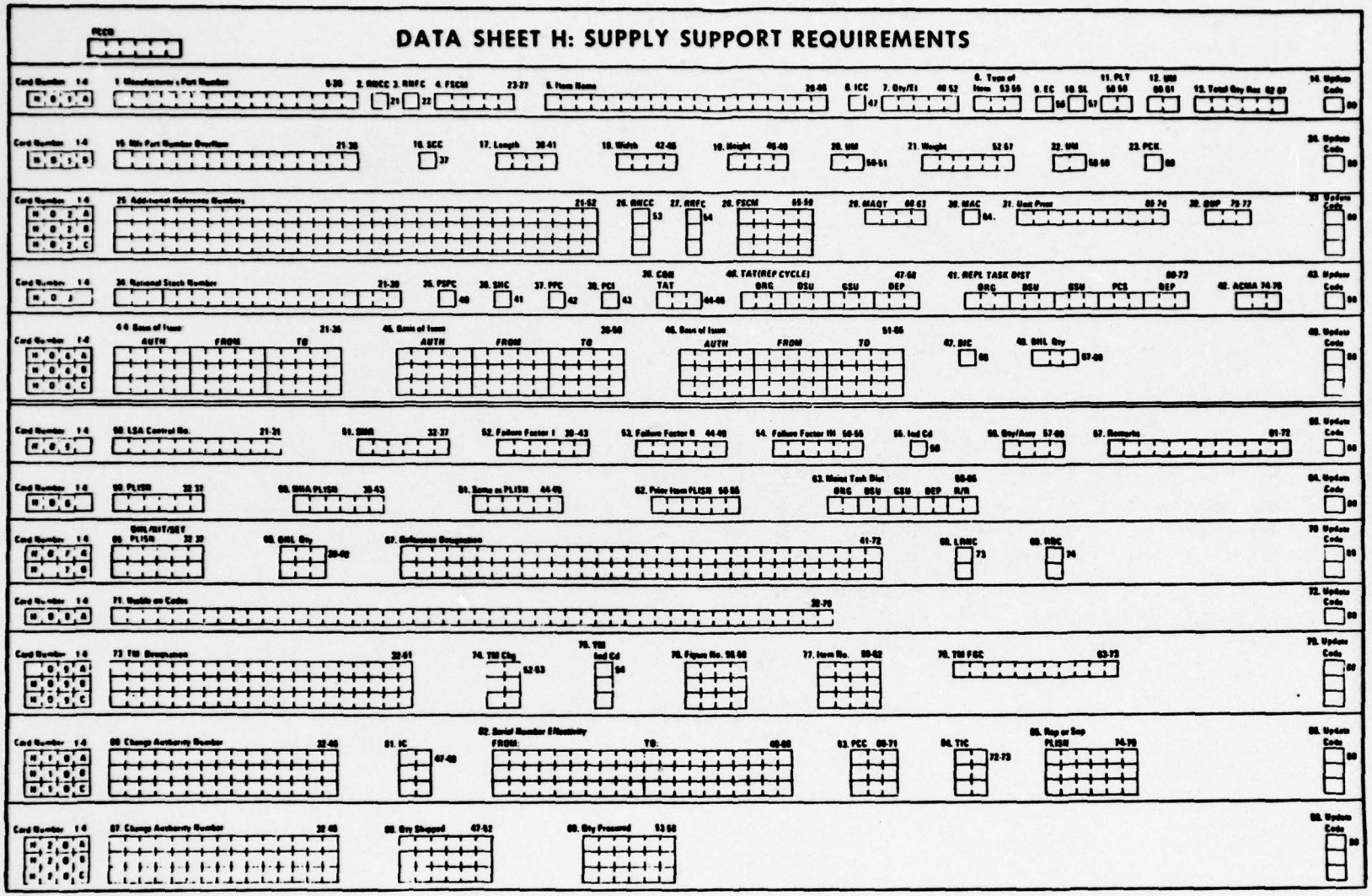

Figure A-9

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